

## ABSTRACT

[0033] The invention is directed to a method for the spectrometric determination of the oxygen saturation of blood in the presence of optical disturbance variables in which transmission measurements and reflection measurements are carried out in at least two wavelengths that are isosbestic for hemoglobin and oxyhemoglobin, and at least one other wavelength at which the extinction of hemoglobin and oxyhemoglobin differ. Corresponding auxiliary functions are defined in the measurement spectrum (M) and in the reference spectra of hemoglobin and oxyhemoglobin, at least two of the measurement values or two of the reference values for the isosbestic wavelengths lying on this auxiliary function. A corrected measurement spectrum (M'') is generated by the two auxiliary functions. The oxygen saturation is determined by comparing the changed data of this corrected measurement spectrum (M'') with the data of the reference spectra at the other wavelength.